

WHAT IS CLAIMED IS:

1. An integrated hydrotreating process for the treating of FCC feed to achieve low sulfur specifications in FCC gasoline and the production of an ultra low sulfur diesel stream which process comprises:

- 5           a) passing a first hydrocarbonaceous feedstock and hydrogen to a first denitrification and desulfurization reaction zone operated at reaction zone conditions including a temperature from about 204° to 482°C (400° to 900°F) and a pressure from about 3.6 to 17.3 MPa (500 to 2500 psig) with a catalyst and recovering a denitrification and desulfurization reaction zone effluent
- 10           therefrom;
- b) passing the denitrification and desulfurization reaction zone effluent to a high pressure stripper maintained at a temperature from about 149° to 454°C (300° to 850°F) to produce a first vapor stream and a first liquid stream;
- c) passing at least a portion of the first vapor stream and a second feedstock
- 15           comprising diesel boiling range hydrocarbons to a second denitrification and desulfurization reaction zone to produce a second liquid stream comprising reduced sulfur content, diesel boiling range hydrocarbons and a hydrogen-rich gaseous stream containing hydrogen sulfide; and
- d) passing the hydrogen-rich gaseous stream containing hydrogen sulfide to an
- 20           acid gas scrubbing zone to produce a hydrogen-rich gaseous stream having a reduced concentration of hydrogen sulfide; and

e) passing at least a portion of the hydrogen-rich gaseous stream having a reduced concentration of hydrogen sulfide to the high pressure stripper and the first denitrification and desulfurization reaction zone.

2. The process of Claim 1 wherein at least a portion of the first liquid stream is passed to at least one vapor-liquid separator to produce a third liquid stream containing reduced sulfur content and hydrocarbons boiling above the diesel boiling range.

3. The process of Claim 1 wherein the second denitrification and desulfurization reaction zone is operated at reaction zone conditions including a temperature from about 204° to 482°C (400° to 900°F) and a pressure from about 3.6 to 17.3 MPa (500 to 2500 psig).

4. The process of Claim 1 wherein a majority of the first hydrocarbonaceous feedstock boils in the range from about 232° to 566°C (450° to 1050°F).

5. The process of Claim 1 wherein a majority of the second hydrocarbonaceous feedstock boils in the range from about 204°C to about 343°C (400°F-650°F).

6. The process of Claim 1 wherein the hydrogen introduced into the high pressure stripper contains less than about 50 volume ppm hydrogen sulfide.

7. The process of Claim 1 wherein the second liquid stream comprising reduced sulfur content, diesel boiling range hydrocarbons contains less than about 50 wppm sulfur.

8. The process of claim 2 wherein the third liquid stream containing reduced sulfur content and hydrocarbons boiling above the diesel range is suitable for a feedstock to a fluid catalytic cracking unit.

9. The process of Claim 1 wherein the acid gas scrubbing zone utilizes an aqueous amine scrubbing solution.

10. An integrated hydrotreating process for the production of a low sulfur diesel stream which process comprises:

- 5           a) passing a first hydrocarbonaceous feedstock and hydrogen to a first denitrification and desulfurization reaction zone operated at reaction zone conditions including a temperature from about 204° to 482°C (400° to 900°F) and a pressure from about 3.6 to 17.3 MPa (500 to 2500 psig) with a catalyst and recovering a denitrification and desulfurization reaction zone effluent
- 10           therefrom;
- b) passing the denitrification and desulfurization reaction zone effluent to a high pressure stripper maintained at a temperature from about 149° to 454°C (300° to 850°F) to produce a first vapor stream and a first liquid stream;
- 15           c) passing at least a portion of the first vapor stream and a second feedstock comprising diesel boiling range hydrocarbons to a second denitrification and desulfurization reaction zone to produce a second liquid stream comprising reduced sulfur content, diesel boiling range hydrocarbons and a hydrogen-rich gaseous stream containing hydrogen sulfide;
- 20           d) passing the hydrogen-rich gaseous stream containing hydrogen sulfide to an acid gas scrubbing zone to produce a hydrogen-rich gaseous stream having a reduced concentration of hydrogen sulfide; and

- e) passing at least a portion of the hydrogen-rich gaseous stream having a reduced concentration of hydrogen sulfide to the high pressure stripper and the first denitrification and desulfurization reaction zone.